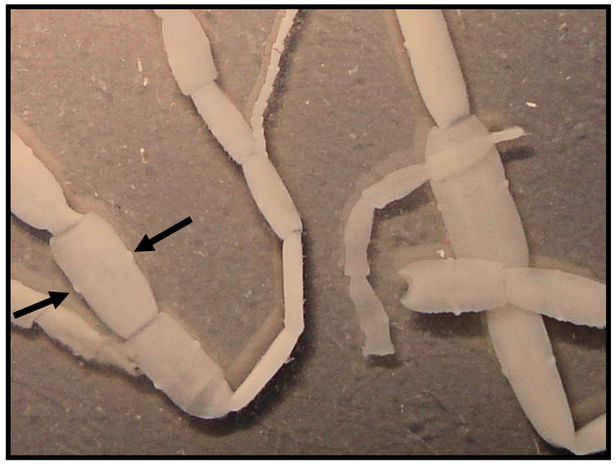
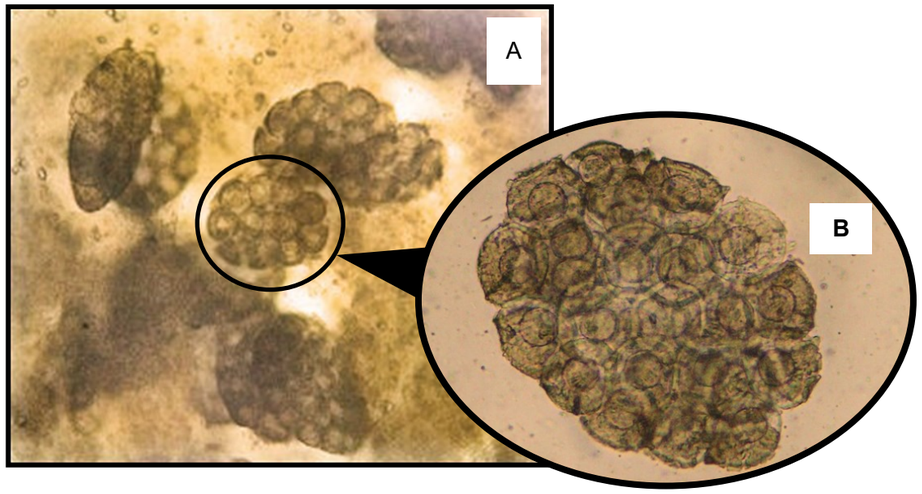
Fleas and transmission of the tapeworm *Dipylidium caninum* in dogs and cats

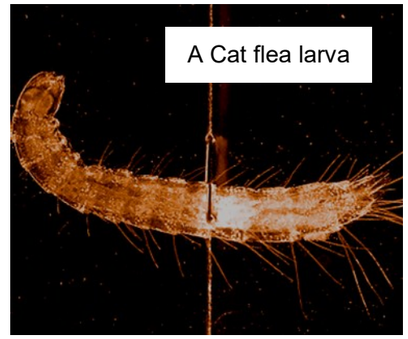
The life cycle of ***Dipylidium caninum,*** a common tapeworm of dogs and cats uses fleas as its main intermediate host. Flea infestations induce excessive biting and licking of the coat which increases the chance of a cat or dog swallowing an infective flea and in this way acquiring the tapeworm. Reinfections can be prevented by following a flea control programme.



1. *Dipylidium caninum* inhabits the small intestine and can reach up to 0.5m in length. Mature segments (proglottids) are rice grain-shaped with a genital pore on either side of the segment (arrows). As the tapeworm matures, proglottids containing eggs are shed from the parasite's body and appear in the faeces of its host.



2. Segments are shed in the same areas that flea eggs fall off a flea-infested cat or dog; Image A shows a disintegrated segment and several *Dipylidium* egg clusters known as 'packets'. Each packet contains 15-30 spherical eggs (image B). Flea larvae from hatched eggs readily chew on dead skin and scales and indeed any organic matter, including the tapeworm egg clusters.

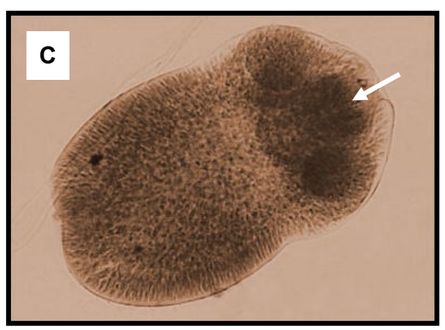


SIGNIFICANCE

Infections are usually of minor significance although diarrhoea can be a consequence of heavy infestations. The segments are motile and disturbing for pet owners when they drop off the pet and crawl about on household carpets and pets' bedding.

5. Tapeworms start to develop in dogs and cats when fleas containing cysticercoids are swallowed as a result of self grooming. **Development to a new mature adult tapeworm takes approx. 3 weeks.**

Cat image: Wikimedia Commons (Unrestricted use)



4. Image C shows a cysticercoid disseected from an adult flea. A single evaginated scolex (head, arrow) is embedded in a small solid cyst.

3. Each tapeworm egg has an onchosphere supporting 6 tiny hooklets - this is the juvenile tapeworm. When ingested by a flea larva it develops to the cysticercoid stage in the flea abdomen (image C) and matures further as the flea larva transforms into an adult following metamorphosis in the flea cocoon.

The chewing lice cats (*Felicola.,* left image) and *Trichodectes* of dogs (right image) may also act as intermediate hosts but this transmission route appears far less important. Lice become infected if they ingest segments which have remained on the animals coat.